UNITED STATES PATENT AND TRADEMARK OFFICE

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10/748,705	12/29/2003	Tomasz Bogdan Madajczak	10559-903001 / P17951	2140

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EXAMINER
TANG, KENNETH

ART UNIT	PAPER NUMBER
2195	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.
10/748,705</td><td>Applicant(s)
MADAJCZAK, TOMASZ BOGDAN</td></tr>
<tr><td>Examiner
KENNETH TANG</td><td>Art Unit
2195</td></tr>
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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 December 2008</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,3,5-8,10,12-15,17,18,20,21,23,24 and 26</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,3,5-8,10,12-15,17,18,20,21,23,24 and 26</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1, 3, 5-8, 10, 12-15, 17-18, 20-21, 23-24, and 26 are presented for examination.

2.   This action is in response to the Amendment on 12/8/08. Applicant's arguments have

been fully considered but were not found to be persuasive.

Specification

3.   The specification is objected to as failing to provide proper antecedent basis for the

claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the

following is required: With respects to claim 8, the "computer-readable storage medium" lacks

antecedent basis in the specification.

Claim Objections

4.   Claims 1, 3, 5-7 are objected to because of the following informalities: In claim 1, line 3,

insert ';' after – processor – in order to add the missing semicolon. Claims 3 and 5-7 are also

objected as being dependent on objected claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 1, 3, 5, 7-8, 10, 12, 14-15, 17-18, 20-21 and 23-24, and 26 are rejected under

35 U.S.C. 102(e) as being anticipated by Pandya (US 2004/0030770 A1).

6.   As to claim 1, Pandya teaches a method comprising:

receiving a packet in a packet processor (Fig. 17, items 1701, 1706a), the packet

processor comprising:

a stack processor (one of the SAN Packet Processors) (Fig. 17, item 1706b);

a hardware scheduler in the stack processor (Packet Scheduler) (Fig. 17, 1702, page 9,

[0109], Fig. 19);

a control processor (one of the SAN packet processors or Control Plane Processor) (Fig.

21, items 2101, 2102, 2103, Fig. 17, items 1711, 1706(a)-(n)); and

a packet engine (TCP/IP processor engine or IP Storage processor engine or "packet

engine") managed by the control processor (SAN packet processor) (Fig. 21, item 2101,

[0037]-[0038]);

scheduling processing of the packet received by the packet processor (IP Network

Application Processor) with the hardware scheduler, wherein scheduling includes receiving an

interrupt signal from the packet engine (packet scheduler 1702) (SAN Packet Processor 1706(a)-

(n) or Control Plane Processor) (Fig. 17, items 1702, 1706(a)-(n), 1711, page 9, [0107]-[0108],

Fig. 29, items 2904, 2903, claim 16(o), page 10, [0112], lines 13-20, page 10, [0113]).

7.   As to claim 3, Pandya teaches wherein the scheduling includes identifying an interrupt

handling routine (page 7, [0100], lines 30-31, page 10, [0012]).

8.   As to claim 5, Pandya teaches wherein the scheduler uses a weighted round robin

scheduling scheme (page 10, [0115], lines 16-20).

9.   As to claim 7, Pandya teaches wherein the stack processor passes a message through a

communication queue to the control processor ([0180], Fig. 42, Host Input Queue and Host

Output Queue).

10.   As to claim 8, it is rejected for the same reasons as stated in the rejection of claim 1.

11.   As to claims 10, 12 and 14, they are rejected for the same reasons as stated in the

rejections of claims 3, 5 and 7.

12.   As to claim 15, it is rejected for the same reasons as stated in the rejection of claim 1.

13.   As to claim 17, it is rejected for the same reasons as stated in the rejections of claim 3.

14.   As to claim 18, it is rejected for the same reasons as stated in the rejection of claim 1. It is noted that the term "capable of" (line 4) in the claim signifies the intended use recitation, thus, the limitation of "scheduling processing of a packet received by the packet processor with a hardware scheduler in a stack processor included in the packet processor; wherein scheduling includes receiving an interrupt signal from a packet engine managed by a control processor included in the packet processor" is not given patentable weight. The "packet processor" of Pandya is capable of performing the intended use, therefore, it then meets the claim. See MPEP 2106.

15.   As to claim 20, it is rejected for the same reasons as stated in the rejections of claim 3.

16.   As to claim 21, it is rejected for the same reasons as stated in the rejection of claim 1. In addition, Pandya teaches the use of input/output ports (page 10, [0115], lines 1-16, page 14, [0123]). It is noted that the term "capable of" (line 4) in the claim signifies the intended use recitation, thus, the limitation of "scheduling processing of a packet received by the packet processor with a hardware scheduler in a stack processor included in the packet processor; wherein scheduling includes receiving an interrupt signal from a packet engine managed by a control processor included in the packet processor" is not given patentable weight. The "packet

processor" of Pandya is capable of performing the intended use, therefore, it then meets the

claim. See MPEP 2106.

17.   As to claim 23, it is rejected for the same reasons as stated in the rejection of claims 3.

18.   As to claim 24, it is rejected for the same reasons as stated in the rejection of claim 1 and

4.

19.   As to claim 26, it is rejected for the same reasons as stated in the rejections of claim 3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

20.   Claims 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Pandya (US 2004/0030770 A1) in view of Stenstrom ("Master's Thesis: Implementation of a

Network Processor Based Exchange Terminal", Stockholm, November 2002).

21.   As to claims 6 and 13, Pandya is silent wherein the stack processor receives the packet

for a scratch ring included in the packet processor. However, Stenstrom discloses a

packet/network processor consisting of a plurality of microengines (ME) which utilize a scratch

ring that assists communication between the MEs (page 31, last paragraph). Pandya and

Stenstrom are analogous art because they are both in the same field of endeavor of processing

with a packet processor. One of ordinary skill in the art would have known to modify Pandya's

network processor such that it would include the use of a scratch ring, as taught in Stenstrom.

The suggestion/motivation for doing so would have been to provide the predicted result of a

standard communication means between the various processors/microengines. Therefore, it

would have been obvious to combine Pandya and Stenstrom to obtain the invention of claims 6

and 13.

Response to Arguments

22.   Applicant's amendment has overcome the rejections under 35 USC 101.

23.   During patent examination, the pending claims must be "given their broadest reasonable

interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d

1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during

prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once

issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05,

162 USPQ 541, 550-51 (CCPA 1969).

24.   It is noted that the specification does not give an explicit definition of a stack processor,

control processor, or a packet processor. Therefore, the broadest reasonable interpretation is

taken, and the interpretation is construed as merely three different processors. Therefore, within

the reference of Pandya, any of the processors from the one of the plurality of SAN Packet

Processors, Control Plane Processor, IP Network Application Processor, etc., would read on the

claimed stack processor, control processor, packet processor, etc. Furthermore, Pandya teaches

that the term "engine" can be defined be a data processor. Therefore, the various "engines" in

Pandya (packet engine, Rx command engines, Tx Command Engines, Security Engine,

Classification Engine, TCP Engine, IP Storage Engine, etc., also would read on the claimed stack

processor, control processor, packet processor, etc.

25.   Applicant argues that Pandya does not teach the scheduling to include receiving an

interrupt signal from the packet engine.

26.   In response, it was shown that a processor/engine has a timer for event timing (claim

16(o), Fig. 29, items 2904, 2905, etc.). Hardware interrupts are used as a way to avoid wasting

the processor's valuable time in polling loops, waiting for external events. When the time for an

event expires, an interrupt would occur.

27.   As shown in the office action, it is noted that in claims 18 and 21, term "capable of" (line

4) in the claim signifies the intended use recitation, thus, the limitation of "scheduling processing

of a packet received by the packet processor with a hardware scheduler in a stack processor

included in the packet processor; wherein scheduling includes receiving an interrupt signal from

a packet engine managed by a control processor included in the packet processor" is not given

patentable weight. The "packet processor" of Pandya is capable of performing the intended use,

therefore, it then meets the claim. See MPEP 2106.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to KENNETH TANG whose telephone number is (571)272-3772.

The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

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like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VAN H NGUYEN/   /Kenneth Tang/
Primary Examiner, Art Unit 2194   Examiner, Art Unit 2195